Terumo, Scotland) between September 2005 and September 2008 were prospectively recorded. Patients were divided in Group A (proximal neck angle ≥ 60° or iliac arteries angle ≥ 90°) and Group B (all others). Main endpoints were technical success (primary and assisted) clinical outcome and survival. Results in the two groups were compared by Kaplan Mayer life table analysis with logrank test (Mantel-Cox).

Results: One-hundred patients, with a mean age of 73.8±7.0 years, were treated. Mean aneurysm diameter was 5.67±10.4 cm. A severe angulation of the proximal aortic neck or/and iliac arteries was present in 37 cases (Group A). Patients without a severe angle were 63 (Group B) The mean follow-up was 20.5±10.7 months. Overall primary technical success was achieved in 100% of the patients. At 24 months follow-up, overall survival, primary and assisted clinical success were 87.9%, 80.8% and 93.7% respectively. Survival, primary and assisted clinical success were 97.2%, 87.9% and 91.1% in Group A and 82.4%, 76.8% and 95.2% in Group B respectively. No statistically significant differences were found between the two groups.

Conclusion: Aneurysms with severe neck or iliac arteries angulation can be treated by a ring-stent endograft with results similar of those of AAA with more favourable anatomy. Longer follow-up is awaited to determine the role of this kind of endograft in AAA treatment.

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PP60.

Endovascular Aneurysm Repair (EVAR) in Nonagenarians is Safe and Effective

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Objectives: Advanced age is a significant risk factor that has steered patients away from open aneurysm repair and towards expectant management. The reduced morbidity and mortality of stent grafting, however, permits aneurysm repair in patients previously considered too high a risk for open surgery. We report our experience with EVAR in nonagenarians.

Methods: A retrospective chart review identified all patients >90 years old undergoing EVAR over a 10-year period at our institution. Collected data included preoperative co-morbidities, peri-operative complications, endoleaks, reinterventions, and long term survival. Anesthetic choice and endograft selection were based on patient co-morbidities, anatomy, and surgeon preference. Means were compared using the Student's t-test.

Results: 23 patients underwent endovascular aneurysm repair (EVAR). The mean age was 91.5 years (range 90-94), with 15 (65%) males and 8 (35%) females. Mean abdominal aortic aneurysm diameter was 6.3±1.1 cm. Eight patients (35%) were symptomatic (pain or tenderness). There were no ruptures. 13 patients (57%) had general anesthesia while 10 (43%) had local or regional anesthesia. 12 Cook Zenith grafts, 2 Medtronic Talent grafts, 9 Medtronic Aneurx grafts, and 1 Guidant Ancure graft were used. Mean post-operative length of stay was 3.1±2.4 days (2.5±1.8 days for asymptomatic vs 4.1±3.2 days for symptomatic, p=0.14). There was one peri-operative mortality (4.3%) following EVAR for a symptomatic aneurysm. This occurred after discharge at post-operative day 26 secondary to a myocardial infarction. There were 2 groin seromas (8.7%) and 4 systemic complications (17.4%) including 2 myocardial infarctions, 1 episode of atrial fibrillation, and one gastrointestinal bleed. In follow-up, one patient required re-intervention for endoleak (4.3%). There were no aneurysm related deaths beyond the 30-day post-operative period. Mean survival beyond 30 days was 800±459 days following EVAR. EVAR patients still alive have a mean survival of 795±506 days.

Conclusions: This is the largest reported EVAR series in nonagenarians. Despite their advanced age, these patients benefit from EVAR with low morbidity, low mortality, and survival exceeding 2.2 years. With or without symptoms, patients over the age of 90 should be considered for EVAR.

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Endovascular AAA

PP61.

Warfarin Therapy after Endovascular Aneurysm Repair (EVAR) of the Abdominal Aorta: Effect on Endoleak Development

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Objectives: The presence of an endoleak after endovascular aneurysm repair (EVAR) may leave patients vulnerable to sac expansion and potentially sac rupture. We investigated whether anticoagulation with warfarin was an independent risk factor for endoleak formation after EVAR for abdominal aortic aneurysm (AAA).

Methods: From January 2000 to January 2007 all endovascular AAA procedures were captured in a clinical database. Follow-up at 1 month, 6 months, 12 months, and annually thereafter was routine. Patient demographics, co-morbidities, morbidity and mortality, EVAR device, and anticoagulation therapy were recorded. The presence of endoleak was classified and reported according to published guidelines. Kaplan-Meyer survival analysis was used to determine freedom from an endoleak. Rank sum and t-test analyses were used to assess patient characteristics as a determinant of risk for endoleak. P<0.05 achieved statistical significance.

Result: One Hundred and twenty seven consecutive endovascular repairs were examined. The mean age of patients at EVAR was 73.8 and mean aneurysm size at was 5.9cm. Median time to follow up was 26 months. During this time period there were 38 documented endoleaks [Type I (n=8), Type II (n=28), Type III (n=1), Type IV (n=1)] which required which 12 secondary procedures. Patients on warfarin therapy (n=24) were compared to patients on anti-platelet therapy (n=103). There were no significant differences in age (p=0.36), initial aneurysm size (p=0.36), initial post-operative aneurysm sac volume (p=0.59), or duration of follow-up (p=0.23). There was, however, a significant decrease in freedom from endoleak in the group of patients on warfarin (p=0.0075). Additionally, postoperative volumetric analysis showed a net increase in aneurysm sac volume of 14.4% in the warfarin group compared to a 4.34% decrease in the anti-platelet patients.

Conclusions: Warfarin appears to increase the incidence of endoleak after EVAR. This, in turn, is associated with continued aneurysm sac expansion.

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PP62.

Exclusion from Endovascular Repair of Abdominal Aortic Aneurysm: A Single Center Experience

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Objectives: We examined the current practice of open repair of abdominal aortic aneurysms (AAA) at a university hospital. We hypothesized that endovascular aortic repair (EVAR) has become the standard approach to AAA repair and that exclusion from EVAR was most often on anatomic grounds.

Methods: All patients undergoing open AAA repair or EVAR between April 2004 and October 2008 were prospectively entered into a database, and the rationale for open repair was identified retrospectively. We excluded patients undergoing thoracoabdominal aneurysm repair requiring cardiopulmonary bypass.

Results: Over 54 months, 882 patients underwent AAA repair. EVAR was performed in 570 (64.6%); 312 (35.4%) patients had open repair. Among those treated with open repair, 215 (69%) were men and 97 (31%) were women, the average age was 72.4 years, and the average maximal aneurysm diameter was 6.3 cm. The overall 30-day mortality for open repair was 4.1%, while 30-day mortality for elective open repair was 2.8%. Of those patients undergoing open repair, 56% (176/312) were juxtarenal (20%), suprarenal (14%), or type IV thoracoabdominal aortic aneurysms (22%). Meanwhile, 10% of patients (31/312) had inadequate access vessels for EVAR and 15% (46/312) had aorto-bi-iliac aneurysms, while 24% (74/312) of patients had infrarenal AAA's with hostile proximal necks. Finally, 5% of patients (17/312) underwent open conversion of EVAR. 36 of 312 (11%) patients met multiple EVAR exclusion criteria. Only three (0.9%) patients who underwent open repair were clearly eligible for EVAR on anatomic grounds.

Conclusions: Over one-third of patients with AAA were ineligible for EVAR and required open repair. Given that only three patients underwent open repair preferentially, EVAR appears to be the standard treatment for eligible patients. Open repair is most commonly performed for juxtarenal or more proximal AAA or hostile proximal neck anatomy. This study reinforces the need for novel devices capable of sealing stent grafts in the pararenal and visceral aorta.

Single-center experience in open AAA repair

Selected reasons for open repair	*Number (%)*
Conversion of prior EVAR	17/312 (5.4%)
Distal obstruction (inadequate vascular access)	31/312 (10%)
Aorto-bi-iliac aneurysm	46/312 (15%)
Juxtarenal AAA, Suprarenal AAA, or Type IV TAAA	176/312 (56%)
Hostile neck	74/312 (24%)
Neck < 2cm in length	53/312 (17%)
Neck > 32 mm in diameter	9/312 (2.9%)
Neck trapezoidal	4/312 (1.3%)
Neck angulated	8/312 (2.6%)